

Appl. No. 09/693,019
Amdt. April 20, 2004
Reply to Office Action of February 3, 2004

APP 1204

Amendments to the Specification:

Replace the paragraph beginning at page 7, line 7 with the following:

A¹
SIP provides a means is if of signaling for supporting internet telephony and multicast multimedia conferences on the Internet. It uses a number of methods to initiate signaling tasks and a number of responses to indicate the success or failure. SIP methods include INVITE, REGISTER, ACK, BYE, CANCEL, OPTIONS, and INFO. SIP responses are distinguished by status codes. For instance, 1xx responses are used for progress update, 2xx codes for success, 3xx for redirection, 4xx for request failure, etc.

Replace the paragraph beginning at page 7, line 14 with the following:

A²
SIP has three entities, user agents, proxy servers and redirect servers. The SIP user agent sends SDIP messages upon user's request, and receives and handles SIP messages from other SIP entities, and starts applications as necessary. A SIP proxy server relays SIP messages across the network using the domain name, while a SIP redirect server returns the location of the host rather than relaying the SIP message. Both SIP proxy and redirect servers accept registration requests containing the current locations of users from users (i.e., SIP user agents). The location can be stored in either locally at the SIP server or at a dedicated location server, referred to as a SIP register. This registration process enables the network to locate users even if they change their locations.

Replace the paragraph at page 8, line 4 with the following:

- A³
(2) The callee's agent sends back an OK message, i.e. 200OK message, to the caller's user agent to accept the invitation along with the {insert} acceptable session description.

Replace the paragraph at page 13, line 4 with the following:

A⁴
Figure 8 A illustrates the movement of a mobile station during cell hand-off and Figure 8B illustrates the logical sequence of operations of cell hand-off performed by the preferred embodiment of the present invention.

Replace the paragraph at page 13, line 7 with the following:

A⁵
Figure 9 A illustrates the movement of a mobile station during subnet hand-off and Figure 9 illustrates the logical sequence of operations of subnet hand-off performed by the preferred embodiment of the present invention.

Replace the paragraph at page 13, line 10 with the following:

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A6
Figure 10 A illustrates the movement of a user during domain hand-off (roaming) and Figure 10 B illustrates the logical sequence of operations of domain hand-off (roaming) performed by the preferred embodiment of the present invention.

Replace the paragraph starting at page 28, line 24 with the following:

A7
Referring to Figure 8 A, as the mobile station moves from location A to location B, a link layer mobility management entity: 1) binds the mobile station's MAC address (or CDMA sequence) to the port within base station controller 850 that is destined for base station 865 (Step 801, Figure 8B), and 2) updates the s label translation table of the base station controller 850 so that information or data packets destined for the mobile station 1, previously at location A, would now be re-routed to base station 865 (Step 802, Figure 8B). Mobile station 1 is now able to simultaneously communicate with the two adjacent base stations 855 and 865 and a smooth hand off will occur because IP address binding to base station 855 is maintained for a certain time-out period after cell hand-off.

Replace the paragraph starting at page 29, line 9 with the following:

A8
The present invention supports subnet hand-off (i.e., micro-mobility) during a communication session. Referring to Fig 9 A, at step ~~901~~, as the mobile station 1 moves from one subnet (location B) to another subnet (location C) on its Home Network, it still remains registered with its Home Network. At location C, the mobile station 1 will first request (Step 901, Figure 9B) a new IP address from the DHCP server 922, either directly or via the SIP register 921. The DHCP server will simultaneously (Step 901, Figure 9B): assign the mobile station 1 a temporary IP address, the IP address of the edge router and controller 946 (the default gateway), and the subnet (of location C) mask; and 2) update the domain name system (DNS) to reflect the new IP address assignment. At step 902, Figure 9B, in public networks, the Home Network authenticates the mobile station 1 as protection against fraud. At step 903, the mobile station 1 or SIP server 921 re-invites the corresponding host 2 to the new temporary IP address maintaining the same session ID. At step 904, the SIP server and network resource reservation schemes create a new route with adequate resources between the corresponding host and the mobile for real-time applications such as voice. At step 905, using the SIP INFO method, a short lived tunnel is created between the previous edge router and controller 945 at location B and the current edge router and controller 946 at location C to minimize the loss of transient data due to hand-off. In creating the tunnel T, at step 906, either the mobile station 1 or SIP server informs the edge router and controller 945 at location B to bind the previous IP address of the mobile station 1 to its current IP address for a predetermined time-out period. Any transient data is thereafter forwarded through the tunnel T to the mobile station 1 at location ~~B~~ C until the ~~time-out~~ time-out period expires.

Replace the paragraph starting at page 30, line 7 with the following:

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AS
The present invention supports roaming (i.e., domain-mobility) during a communication session between a mobile station 1 and a corresponding host or hosts 2. Referring to Figure 10 A, as the mobile station 1 moves from location C within its Home Network to location D within a Visiting Network, the present invention operates as follows: at step 1001, Figure 10B, the mobile station 1 will request a new IP address from the DHCP server 1026 of the Visiting Network. The DHCP server 1026 will simultaneously : 1) assign the mobile station 1 a temporary address; and 2) update the domain name system (DNS) to reflect the new IP address assignment. At step 1002, the mobile station re-registers its new IP address with the SIP server 1026 using the SIP REGISTER method.